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INFORMATION ON S. F. YUR'YEV'S BOOK, "DEFORMATION OF STEEL IN THE PROCESS OF CHEMICOTHERMAL TREATMENT: CARBURIZATION AND NITRIDING"

This book deals with the development of the theory of interaction between the impregnated surface layer of metal and its core. The author establishes close connection of processes in heterogeneous steel with such factors as distortion in dimensions and shape, residual stresses and final properties of material of carburized and nitrided products. He claims that his work, based on numerous original experiments, reveals the one-sided character of existing concepts of case hardening: they do not take into consideration certain phenomena occurring in steel during formation of the case and in the process of subsequent heat treatment. He states that, for complete understanding of the condition of the metal in carburized or nitrided products, it is necessary to study the mutual interaction of unlike volumes of this metal and to investigate regularities in the variation of this mutual influence during the entire process of impregnation and heat treatment.

According to the editor, Academician N. T. Gudtsov, the book introduces a great deal of new material into the contemporary theory of the chemicothermal treatment of steel and opens the way for further investigations in the field of the theory of the formation of the final properties in heterogeneous steel. It has also an essential practical value, permitting regulation of stress and deformation in steel during the process of case hardening by impregnation with nitrogen or carbon.

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